AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A transgenic ~~non-human animal~~ mouse expressing at least one transgene comprising a DNA sequence encoding a heterologous Amyloid Precursor Protein(APP) comprising at least the Arctic mutation (E693G) and a further Alzeihmer's disease (AD) ~~AD (Alzheimer's disease)~~ pathogenic mutation or a further transgene affecting AD pathogenesis, which results in increased amounts of intracellular soluble Aβ aggregates, including Aβ peptides.

2. (currently amended) The transgenic ~~animal~~ mouse according to claim 1, wherein the transgene/transgenes are integrated in the genomic DNA.

3. (currently amended) The transgenic ~~animal~~ mouse according to claim 1, wherein said transgene/transgenes are operably linked to a promoter effective for expression of said gene in the brain tissue of said ~~animal~~ mouse.

4. (currently amended) The transgenic ~~animal~~ mouse according to claim 1, wherein the endogenous APP is expressive or non-expressive.

5. (cancelled)

6. (withdrawn-currently amended) The transgenic ~~animal~~ mouse according to claim 1, wherein said further transgene comprises a DNA sequence encoding apolipoprotein E, apolipoprotein J(clusterin), a_1-antichymotrypsin (ACT) or fragments thereof.

7. (currently amended) The transgenic ~~animal~~ mouse according to claim 1, wherein said further AD pathogenic mutation is one of the APP mutations KM670/671DF, KM670/671DY, KM670/671EF or KM670/671EY.

8. (currently amended) The transgenic ~~animal~~ mouse according to claim 1, wherein said further AD pathogenic mutation is one of the APP mutations KM670/671NL, KM670/671NY, KM670/671NF, KM670/671KL, KM670/671DL or KM670/671EL~~, wherein KM670/671NL (the Swedish mutation) is preferred~~.

9. (currently amended) The transgenic ~~animal~~ mouse according to claim 1, wherein the transgenic ~~animal~~ mouse

expresses only one transgene which comprises only E693G and KM670/671NL ~~the Arctic mutation (E693G) and the Swedish mutation (KM670/671NL)~~.

10. (withdrawn-currently amended) The transgenic ~~animal~~ mouse according to claim 1, additionally comprising a homologously integrated targeting construct for at least one of the neprilysin or insulin-degrading enzyme (IDE) genes, which disrupts these genes through gene ablation (knock-out) and enhances Aβ-40 and/or Aβ-42 Arctic peptide production.

11-13. (cancelled)

14. (currently amended) A method of producing the transgenic ~~animal~~ mouse according to claim 1, comprising:

integrating in the genomic DNA at least one transgene by microinjecting said at least one transgene into a fertilized egg or an embryo, said at least one transgene comprising a DNA sequence encoding a heterologous Amyloid Precursor Protein (APP) comprising at least the Arctic mutation (E693G) and a further ~~AD (Alzheimer's disease)~~ Alzeihmer's disease (AD) pathogenic mutation or a further transgene affecting AD pathogenesis;

transferring said fertilized egg or said embryo microinjected with said at least one transgene to a mouse so as

to produce a transgenic mouse from said fertilized egg or said embryo.

15. (currently amended) The method according to claim 14, wherein said transgene/transgenes are operably linked to a promoter effective for expression of said gene in the brain tissue of said ~~animal~~ mouse.

16. (withdrawn) The method according to claim 14, wherein the endogenous APP is optionally made non-expressive.

17. (cancelled)

18. (withdrawn) The method according to claim 14, wherein said further transgene comprises a DNA sequence encoding apolipoprotein E, apolipoprotein J (clusterin), al-antichymotrypsin (ACT) or fragments thereof.

19. (previously presented) The method according to claim 14, wherein said further AD pathogenic mutation is one of the APP mutations KM670/671DF, KM670/671DY, KM670/671EF or KM670/671EY.

20. (currently amended) The method according to claim 14, wherein said further AD pathogenic mutation is one of

the APP mutations KM670/671NL, KM670/671NY, KM670/671NF, KM670/671KL, KM670/671DL or KM670/671EL~~, wherein KM670/671NL (the Swedish mutation) is preferred~~.

21. (withdrawn) The method according to claim 14, additionally comprising homologously integrating a targeting construct for at least one of the neprilysin or insulin-degrading enzyme (IDE) genes.

22. (currently amended) A method of screening agents useful for treating, preventing or inhibiting Alzheimer's disease, comprising:

administering ~~wherein the~~ an agent to a first transgenic ~~animal~~ mouse according to claim 1 ~~is used for screening for agents~~; and

observing the ability of the first transgenic mouse to form Aβ peptides;

comparing the ability of the first transgenic mouse to form Aβ peptides to the ability of a second transgenic mouse according to claim 1 to form Aβ peptides, the agent not being administered to the second transgenic mouse;

wherein a decrease in Aβ formation in the first transgenic mouse indicates that the agent is useful for treating, preventing or inhibiting Alzheimer's disease.

23. (currently amended) A method of screening for diagnostic agents for Alzheimer's , comprising:

administering an agent to a first transgenic mouse according to claim 1 an agent;

observing the ability of the first transgenic mouse to form Aβ peptides;

comparing the ability of the first transgenic mouse to form Aβ peptides to the ability of a second transgenic mouse according to claim 1 to form Aβ peptides, the agent not being administered to the second transgenic mouse;

wherein a decrease in Aβ formation in the first transgenic mouse indicates that the agent ~~wherein the transgenic animal according to claim 1 is used for screening for diagnostic agents~~ is a diagnostic agent for Alzheimer's disease.

24. (new) The transgenic mouse according to claim 8, wherein said further AD pathogenic mutation is KM670/671NL.

25. (new) The method according to claim 20, wherein said further AD pathogenic mutation is KM670/671NL.